

08CN07467-1

REMARKS

Claims 1-30 are pending in the present application. Claims 14, 15, and 22 have been canceled, Claims 1, 3, 4, 5, 21, 24, 25, 26 and 30 have been amended, leaving Claims 1-13, 16-21, and 23-30 for consideration upon entry of the present Amendment.

Claims 3, 4, 5, 21, 24, and 25 have been amended to replace nylon 6 and nylon 6,6 with their respective IUPAC names. Support for these amendments can be found in the respective claims as originally filed.

Support for the other amendments to Claim 5 can be found in the Specification in Paragraph 0029, lines 2-11.

Support for the amendments to Claims 1, 21, and 30 can be found in paragraph 0043 and Claims 21 and 22 as originally filed.

Support for the amendment to Claim 26 can be found in the Specification paragraphs 0046 through 0061 and Claim 16.

The Specification has been amended to add the IUPAC names for nylon 6 and nylon 6,6, as explained in detail below.

No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

Claim Objections

Claims 3, 4, 24 and 25 stand objected to for use of the allegedly informal term "nylon". Applicants respectfully assert that "nylon" is a well known and accepted term of art and do not understand the basis for the Examiner's rejection. However, to advance prosecution Claims 3, 4, 24 and 25 have been amended to recite the IUPAC names of nylon 6 and nylon 6,6 (poly(pentamethylene carboximide) and poly(hexamethylene adipamide), respectively).

Claim 5 stands objected to as allegedly being in improper dependent form. Claim 5 has been amended to recite the poly(hexamethylene adipamide) at 30-51 wt%. Claim 5 has also been amended such that the weight percentages are based on the total weight of the composition.

08CN07467-1

Claim 26 stands objected for being drawn to a "reaction product" and as allegedly being a "substantial duplicate of Claim 1" (Paper 3, Page 2). Claim 26 has been amended to include the component of a compatibilizing agent. As discussed in paragraph 0060, the compatibilizing agent may react with other components of the composition.

In view of the foregoing, reconsideration and withdrawal of the claim objections are requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-4, 6, 14, 16, 17, 19, and 26-30 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 5,109,052 to Kasai et al. (hereinafter "Kasai") in view of U.S. Patent No. 4,038,343 to Yonemitsu et al. (hereinafter "Yonemitsu"). Applicants respectfully traverse this rejection.

The instant claims are directed to a conductive thermoplastic composition comprising about 20 to about 60 weight percent of a polyphenylene ether copolymer comprising about 75 to about 90 weight percent of 2,6-dimethyl-1,4-phenylene ether units and about 10 to about 25 weight percent of 2,3,6-trimethyl-1,4-phenylene ether units; about 30 to about 65 weight percent of a polyamide; about 1 to about 30 weight percent of an impact modifier comprising a styrene-(ethylene-butylene)-styrene triblock copolymer and a styrene-(ethylene-propylene) diblock copolymer; and about 0.025 to about 40 weight percent of an electrically conductive filler; wherein all weight percents are based on the total weight of the composition.

Kasai is directed to compositions comprising 25-70% by weight of a polyphenylene ether, 25-70% by weight of a polyamide and 2 to 25% by weight of a particular block copolymer mixture (Claim 1). The polyphenylene ether can be a copolymer of 2,6-dimethylphenol with 2,3,6-trimethylphenol (Column 5, lines 15-19). The preferred ratio of 2,6-dimethylphenol to 2,3,6-trimethylphenol is not disclosed. The compositions can further comprise carbon black (Column 14, line 54). In the Examples, a homopolymer of poly(2,6-dimethylphenylene-1,4 ether) is the only polyphenylene ether utilized. The block copolymer contains a hydrogenated block copolymer and a non-hydrogenated diene block copolymer (Claim 1).

08CN07467-1

Yonemitsu is directed to polyphenylene ether compositions comprising 50-98 mol% of a 2,6-dialkylphenol and 2 to 50 mol% of a 2,3,6-trialkylphenol (Abstract). The compositions had an intrinsic viscosity of 0.55 deciliters/gram (Column 4, line 58). The compositions are taught to have good mechanical properties even after heat aging (Abstract).

In making the rejection, the Examiner states "one having ordinary skill in the art would have found it obvious to use the components [of Yonemitsu] because their use in conductive polyphenylene ether-polyamide compositions is fully disclosed in Kasai et al." (Paper 3, Page 5). Applicants submit that the combination of Kasai and Yonemitsu does not render the present claims obvious as neither reference discloses the particular combination of impact modifiers presently claimed.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

The present application teaches and claims a conductive thermoplastic composition comprising in part about 1 to about 30 weight percent of an impact modifier comprising a styrene-(ethylene-butylene)-styrene triblock copolymer and a styrene-(ethylene-propylene) diblock copolymer. Kasai teaches a composition comprising polyphenylene ether and polyamide but fails to disclose the particular combination of impact modifiers claimed in the present application. Yonemitsu does not teach the instantly claimed impact modifiers and thus fails to cure the defects of Kasai. Because Kasai and Yonemitsu alone or in combination fail to disclose at least one element of the instant claims, namely the specific impact modifiers, they cannot render the instant claims obvious. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are requested.

Claims 1-3, 6, 10, 14, 16, 17, 19-21, 26, 27, 29 and 30 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 5,977,240 to Lohmeijer et al. (hereinafter "Lohmeijer") in view of U.S. Patent No. 4,038,342 to Yonemitsu. Applicants respectfully traverse this rejection.

Lohmeijer discloses a composition comprising a polyphenylene ether-polyamide resin and 1-7 parts by weight of an electroconductive filler (Claim 1). The polyphenylene ether

08CN07467-1

can comprise a copolymer of 2,6-dimethyl phenol and 2,3,6-trimethyl phenol (Column 3, lines 23-25). The preferred ratio of 2,6-dimethylphenol to 2,3,6-trimethylphenol is not disclosed. In the Examples, a homopolymer of poly(2,6-dimethylphenylene-1,4 ether) is the only polyphenylene ether utilized. Lohmeijer does not disclose the presently claimed combination of impact modifiers.

In making the rejection, the Examiner states "one having ordinary skill in the art would have found it obvious to use the components [of Yonemitsu] because their use in conductive polyphenylene ether-polyamide compositions is fully disclosed in Lohmeijer et al." (Paper 3, Page 6). Applicants submit that the combination of Lohmeijer and Yonemitsu does not render the present claims obvious as neither reference discloses the particular combination of impact modifiers presently claimed.

The present application teaches and claims a conductive thermoplastic composition comprising in part about 1 to about 30 weight percent of an impact modifier comprising a styrene-(ethylene-butylene)-styrene triblock copolymer and a styrene-(ethylene-propylene) diblock copolymer. Lohmeijer teaches a composition comprising polyphenylene ether, polyamide and and electroconductive filler, but fails to disclose the particular combination of impact modifiers claimed in the present application. Yonemitsu does not teach the instantly claimed impact modifiers and thus fails to cure the defects of Lohmeijer. Because Lohmeijer and Yonemitsu alone or in combination fail to disclose at least one element of the instant claims, namely the specific impact modifiers, they cannot render the instant claims obvious. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are requested.

Claims 1-7, 10, 14, 16, 17, 19-21, 23, 24 and 26-30 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 5,843,340 to Silvi et al. (hereinafter "Silvi") in view of U.S. Patent No. 4,038,342 to Yonemitsu.

Silvi discloses conductive polyphenylene ether-polyamide blends (Abstract). The polyphenylene ether can be a copolymer of 2,6-dimethyl-1,4-phenylene ether units with 2,3,6-tri dimethyl-1,4-phenylene ether units (Column 3, lines 19-23). The preferred ratio of 2,6-dimethylphenol to 2,3,6-trimethylphenol is not disclosed. In the Examples, a homopolymer of poly(2,6-dimethylphenylene-1,4 ether) is the only polyphenylene ether

08CN07467-1

utilized. The compositions also comprise carbon black (Column 4, line 38). Silvi fails to disclose the presently claimed combination of impact modifiers.

In making the rejection, the Examiner states "one having ordinary skill in the art would have found it obvious to use the components [of Yonemitsu] because their use in conductive polyphenylene ether-polyamide compositions is fully disclosed in Silvi et al." (Paper 3, Page 8). Applicants submit that the combination of Silvi and Yonemitsu does not render the present claims obvious as neither reference discloses the particular combination of impact modifiers presently claimed.

The present application teaches and claims a conductive thermoplastic composition comprising in part about 1 to about 30 weight percent of an impact modifier comprising a styrene-(ethylene-butylene)-styrene triblock copolymer and a styrene-(ethylene-propylene) diblock copolymer. Silvi teaches a composition comprising polyphenylene ether, polyamide and and conductive carbon black, but fails to disclose the particular combination of impact modifiers claimed in the present application. Yonemitsu does not teach the instantly claimed impact modifiers and thus fails to cure the defects of Silvi. Because Silvi and Yonemitsu alone or in combination fail to disclose at least one element of the instant claims, namely the specific impact modifiers, they cannot render the instant claims obvious. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are requested.

Applicants appreciate the Examiner's indication of the allowability of Claims 8, 9, 11-13, 18 and 22 if rewritten in independent form. Applicants have elected not to rewrite the foregoing claims at this time. In addition, the Examiner has indicated the allowability of Claim 25 once the claim objections are overcome. Accordingly, allowance of Claim 25 is requested.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance of all claims is requested.


08CN07467-1

If there are any additional charges with respect to this Amendment or otherwise,
please charge them to Deposit Account No. 07-0862 maintained by Applicants' attorneys.

Respectfully submitted,

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08CN07467-1

VERSION WITH MARKINGS TO SHOW CHANGES MADE

A Marked-Up version of paragraph 0029 follows:

--In a preferred embodiment, the polyamide comprises nylon 6 (poly(pentamethylene carboximide)) and nylon 6,6 (poly(hexamethylene adipamide)). In this embodiment, the nylon 6 amount may be about 3 weight percent to about 17 weight percent, based on the total weight of the composition. Within this range, the nylon 6 amount may preferably be at least about 7 weight percent. Also within this range, the nylon 6 amount may preferably be up to about 13 weight percent. In this embodiment, the nylon 6,6 amount may be about 25 weight percent to about 51 weight percent. Within this range, the nylon 6,6 amount may preferably be at least about 32 weight percent, more preferably at least about 35 weight percent. Also within this range, the nylon 6,6 amount may preferably be up to about 44 weight percent, more preferably up to about 41 weight percent--.

08CN07467-1

A marked-up version of Claims 1, 3, 4, 5, 21, 24, 25, 26, and 30 follows:

1. (Amended/Marked-Up) A conductive thermoplastic composition comprising:

about 20 to about 60 weight percent of a polyphenylene ether copolymer comprising about 75 to about 90 weight percent of 2,6-dimethyl-1,4-phenylene ether units and about 10 to about 25 weight percent of 2,3,6-trimethyl-1,4-phenylene ether units;

about 30 to about 65 weight percent of a polyamide;

about 1 to about 30 weight percent of an impact modifier comprising a styrene-(ethylene-butylene)-styrene triblock copolymer and a styrene-(ethylene-propylene) diblock copolymer; and

about 0.025 to about 40 weight percent of an electrically conductive filler;

wherein all weight percents are based on the total weight of the composition.

3. (Amended/Marked-Up) The composition of Claim 1, wherein the polyamide comprises poly(pentamethylene carboximide)nylon-6, poly(hexamethylene adipamide)nylon-6,6, or a combination thereof.

4. (Amended/Marked-Up) The composition of Claim 1, wherein the polyamide comprises poly(pentamethylene carboximide)nylon-6 and nylon-6,6poly(hexamethylene adipamide).

5. (Amended/Marked-Up) The composition of Claim 1, wherein the polyamide comprises about 3 to about 17 weight percent of poly(pentamethylene carboximide)nylon-6 and about 3225 to about 51 weight percent of poly(hexamethylene adipamide)nylon-6,6 based on the total weight of the composition.

08CN07467-1

21. (Amended/Marked-Up) A conductive composition comprising:

about 30 to about 45 weight percent of a polyphenylene ether copolymer comprising about 75 to about 90 weight percent of 2,6-dimethyl-1,4-phenylene ether units and about 10 to about 25 weight percent of 2,3,6-trimethyl-1,4-phenylene ether units;

about 30 to 65 weight percent of a polyamide selected from the group consisting of poly(hexamethylene adipamide)nylon-6,6, poly(pentamethylene carboximide)nylon-6, and mixtures thereof;

about 5 to about 20 weight percent of an impact modifier comprising a styrene-(ethylene-butylene)-styrene triblock copolymer and a styrene-(ethylene-propylene) diblock copolymer;

about 0.5 to about 5 weight percent of an electrically conductive filler selected from the group comprising a conductive carbon black, vapor grown carbon fibers, and mixtures thereof; and

about 0.1 to about 5 weight percent a compatibilizing agent selected from the group consisting of citric acid, maleic acid, maleic anhydride, malic acid, fumaric acid, and combinations comprising at least one of the foregoing compatibilizing agents;

wherein all weight percents are based on the total weight of the composition.

24. (Amended/Marked-Up) The composition of Claim 21, comprising about 5 to about 15 weight percent of the poly(pentamethylene carboximide)nylon-6 and about 25 to about 50 weight percent of the poly(hexamethylene adipamide)nylon-6,6.

08CN07467-1

25. (Amended/Marked-Up) A conductive composition comprising:

about 32 to about 38 weight percent of a polyphenylene ether copolymer comprising about 75 to about 90 weight percent of 2,6-dimethyl-1,4-phenylene ether units and about 10 to about 25 weight percent of 2,3,6-trimethyl-1,4-phenylene ether units;

about 35 to about 40 weight percent of poly(hexamethylene adipamide) nylon-6,6;

about 8 to about 12 weight percent of poly(pentamethylene carboximide) nylon-6;

about 5 to about 10 weight percent of a styrene-(ethylene-butadiene)-styrene triblock copolymer;

about 5 to about 10 weight percent of a styrene-(ethylene-propylene) diblock copolymer;

about 1.0 to about 2.5 weight percent of a conductive carbon black; and

about 0.3 to about 1.1 weight percent of citric acid;

wherein all weight percents are based on the total weight of the composition.

26. A conductive thermoplastic composition comprising the reaction product of:

about 20 to about 60 weight percent of a polyphenylene ether copolymer comprising about 75 to about 90 weight percent of 2,6-dimethyl-1,4-phenylene ether units and about 10 to about 25 weight percent of 2,3,6-trimethyl-1,4-phenylene ether units;

about 30 to about 65 weight percent of a polyamide;

about 0.1 to about 5 weight percent of a compatibilizing agent; and

about 0.025 to about 40 weight percent of an electrically conductive filler;

wherein all weight percents are based on the total weight of the composition.

08CN07467-1

30. (Amended/Marked-Up) A method for preparing a conductive thermoplastic composition, comprising: melt blending about 20 to about 60 weight percent of a polyphenylene ether copolymer comprising about 75 to about 90 weight percent of 2,6-dimethyl-1,4-phenylene ether units and about 10 to about 25 weight percent of 2,3,6-trimethyl-1,4-phenylene ether units, about 30 to about 65 weight percent of a polyamide, about 5 to about 20 weight percent of an impact modifier comprising a styrene-(ethylene-butylene)-styrene triblock copolymer and a styrene-(ethylene-propylene) diblock copolymer, and about 0.025 to about 40 weight percent of an electrically conductive filler, wherein all weight percents are based on the total weight of the composition.